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BUSINESS VALUATION UPDATE

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The Implied Private Company Pricing Line 2.0[1]

$K_0 = (FCFF_1 / P) + g$

By Bob Dohmeyer, ASA; Pete Butler, CFA, ASA; and Rod Burkert, CPA/ABV, CVA

Editor's Note: A serious problem area in business valuation is estimating the cost of capital of a small privately held business by using data from publicly traded equity securities. Using this traditional approach, different appraisers analyzing the same firm using the same data sources can come up with vastly different estimates. A new approach has come along that is designed to eliminate the inherent problems in comparing public and private data and to be more reliable in estimating the cost of capital for a privately held business.

Introduction

Most business appraisal assignments are for private companies with revenue less than $10 million. Current costs of capital (K_0) estimation methods rely almost entirely on public security returns. Small privately held companies are different from public equity securities in many fundamental ways. Consequently, there are issues that make these methods unreliable when extrapolated to small privately held businesses. We developed an implied private company pricing line (IPCPL) based on market transactions in small privately held businesses to eliminate highly problematic comparisons and use as a more accurate and defensible starting point to develop a cost of capital for any privately held company with revenue less than $150 million.

Pitfalls when extrapolating public equity securities returns to small privately held businesses

Two appraisers developing a cost of capital for the same small, privately held company can come up with widely divergent results using the same data sources. Here are five reasons why.

Unsystematic aka diversifiable aka company-specific risk. Unsystematic risk is also known as diversifiable risk.[2] Since this type of risk can be easily and inexpensively diversified away via a single exchange traded fund or stock portfolio, it is not compensated for in the public stock returns that are extrapolated to private companies. Small private businesses have a total beta (total risk) of about 3.0 compared to the market portfolio total beta of 1.0.[3] The vast majority of this 3x total risk difference represents company-specific risk, and it is not known how this differential is priced in the market for small private businesses.[4] Aswath Damodaran tells us: "[Total beta] theoretically applies if you have an

1 We say "2.0" as this article updates Dohmeyer and Butler's first exploration of this topic, which was published in *Business Valuation Review*, Spring 2012, Vol. 31, No. 1, pp. 35-47.

2 A business with only one highly specific product or one major customer is an example of high unsystematic/diversifiable risk. Jim Hitchner says, "The estimation of unsystematic risk is one of the more difficult aspects of calculating rates of return." (*Financial Valuation: Applications and Models,* 3rd Edition, p. 192.)

3 Based on our calculations of the total beta of nearly all U.S. publicly traded stocks sorted by size.

4 Many appraisers believe that the small stock premium accounts for some of the 3x total risk issue. Although the cause and amount of the small stock premium are controversial, diversifiable risk, by definition, is not the cause.

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investor who is completely undiversified, but you never have that kind of buyer in the real world. At the other end of the spectrum, 'beta' applies for totally diversified investors. Investors in private companies are somewhere in between."[5]

Liquidity differences. The relationship between return and liquidity is a very active area of research. Dr. Damodaran states this with respect to liquidity issues and private company valuation:

> When you buy a stock, bond, real asset or a business, you sometimes face buyer's remorse. You want to reverse your decision and sell what you just bought. The cost of illiquidity is the cost of this remorse. In the case of publicly traded stock in a heavily traded company, this cost should be small. It will be larger for stock in a small, over-the counter stock and will escalate for a private business, where there are relatively few potential buyers.
>
> One way to capture the cost of illiquidity is through transactions costs, with less liquid assets bearing higher transactions costs (as a percent of asset value) than more liquid assets. Trading costs associated with buying and selling a private business can range from substantial to prohibitive, depending upon the size of the business, the composition of its assets and its profitability. There are relatively few potential buyers and the search costs (associated with finding these buyers) will be high. In fact, if the investor buying it from you builds in a similar estimate of transactions cost she will face when she sells it, the value of the asset today should reflect the expected value of all future transactions cost to all future holders of the asset.
>
> In conventional valuation, there is little scope to show the effect of illiquidity. Cash flows are expected cash flows, the discount rate is usually reflective of the risk in the cash flows and the present value we obtain is the value for a liquid business. With publicly traded firms, we then

5 Dr. Aswath Damodaran, 26th Annual Valuation Roundtable of San Francisco, April 20, 2012, Berkeley, Calif.

> use this value, making the implicit assumption that illiquidity is not a large enough problem to factor into valuation. In private company valuations, analysts have been less willing (with good reason) to make this assumption. The standard practice in many private company valuations is to apply an illiquidity discount to this value. But how large should this discount be and how can we best estimate it? This is a very difficult question to answer empirically because the discount in private company valuations itself cannot be observed.[6]

Small stock premium. The small stock premium is both controversial and highly complex. If one adopts either a liquidity-driven phenomenon, where the lower liquidity of small company stocks drives the higher returns, or the intertemporal flaw of the capital asset pricing model, as demonstrated empirically by the Fama-French data, one needs to take extraordinary care when extrapolating size percentiles to small privately held companies.[7] For example:

> While it would be foolhardy to attribute all of the well documented excess returns that have been associated with owning small market capitalization and low price to book stocks to illiquidity, smaller and more distressed companies (which tend to trade at low price to book ratios) are more illiquid than the rest of the market … The key is to avoid double counting the cost of illiquidity since some of the small stock premium may be compensation for the illiquidity of small cap companies.[8]

Also: "[T]he size effect that [Rolf Banz] is picking up may be attributable to something else he's not identifying; it's just highly correlated to size."[9]

Pass-through entity (PTE) taxes. Today, the "marginal buyer" or "price-setting investor" for small private businesses is likely a PTE.[10] But should appraisers still use a C- corporation income tax rate scheme to remain consistent with the extrapolated, after-tax stock market return data? Or should appraisers use PTE models developed by Grabowski, Treharne, or Van Vleet, or others to tax affect income? Unfortunately, these models fail to incorporate the marginal buyer or price-setting investor inherent in the fair market value framework. Also, these models fail to incorporate what researchers call "clientele effects." For example, Keith Sellers and Nancy Fannon point out:

> Where private market valuation today treats shareholder taxes as directly correlated to value, such treatment is a very far leap from that which is demonstrated by empirical research. At the very least, this should indicate to private market analysts the need to carefully consider offsets and other associated risks when different tax schemes than that which exists in the public market returns are assumed. Like all risks that affect value, this can be demonstrated perhaps most effectively through the cost of capital.[11]

Cash add back/leverage. Traditional weighted average cost of capital methods require estimates of the percentage of debt to total capital, market borrowing rates, and relevered betas—all

6 Dr. Aswath Damodaran, *Marketability and Value: Measuring the Illiquidity Discount*, Stern School of Business, July 2005.

7 One way to minimize duress collinearity is to use the margin analysis provided in the *Duff & Phelps Risk Premium Report*. For an excellent analysis of the intertemporal flaw of CAPM, see John Y. Campbell and Tuomo Vuolteenaho, "Bad Beta, Good Beta," Harvard University, August 2003, ssrn.com/abstract=343780.

8 Dr. Aswath Damodaran, *Marketability and Value: Measuring the Illiquidity Discount*, Stern School of Business, July 2005. This possibility is still being explored by researchers today.

9 James Harrington, *Conversations With the Masters* series, NACVA Annual Consultant's Conference, Dallas, June 2012).

10 Based on IRS Statistics of Income (SOI) data showing significant increases in new S-corporation formations versus nearly no new C-corporation formations.

11 Keith F. Sellers and Nancy J. Fannon, "Valuation of Pass-Through Entities: Looking at the Bigger Picture," 2012 American Taxation Association Midyear Meeting: JLTR Conference, December 2011. Available at ssrn.com/abstract=2003901 or dx.doi.org/10.2139/ssrn.2003901.

difficult to estimate and all subject to estimation errors. Further, many appraisers often make the mistake of either: (1) not adding the subject company's cash balance to the present value of the discounted cash flow analysis; or (2) not relevering beta for the negative leverage implied by not adding the subject company's cash balance to the present value calculation. Damodaran points out:

> In our view, the debate over how much cash is needed for operations and how much is excess cash misses the point when it comes to valuation. Note that even cash needed for operations can be invested in near-cash investments such as treasury bills or commercial paper. These investments may make a low rate of return but they do make a fair rate of return. Put another way, an investment in treasury bills is a zero net present value investment, earning exactly what it needs to earn, and thus has no effect on value. We should not consider that cash to be part of working capital when computing cash flows. The categorization that affects value is therefore the one that breaks the cash balance down into wasting and non-wasting cash. Only cash that is invested at below market rates, given the risk of the investment, should be considered wasting cash. Thus, cash left in a checking account, earning no interest, is wasting cash.[12]

Summary of pitfalls. We all know the pitfalls of using public equity returns; we just don't like to admit they exist or believe that nothing better than starting with public equity returns is available. As a result, the pitfalls noted above can lead two appraisers to wildly different cost of capital estimates. To illustrate the cumulative magnitude of these pitfalls, we hypothecate two independent appraisers assigned to value the same private business where both agree:

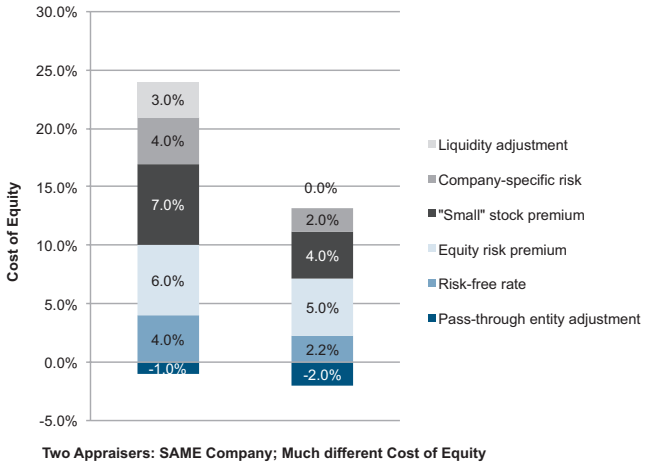
- To utilize management's forecast of cash flow with a stable growth rate of 2%; and
- The subject company has "typical" company-specific risk.

Then, both appraisers build up their equity discount rate as shown in Exhibit 1.

The two independent and objective appraisers could easily arrive at an unlevered cost of equity estimate for the same private company of either 24.0% or 11.2%, with both appraisers falling within a range of reasonableness for each specific metric. The consequence of this difference, when incorporating the 2% growth rate, results in the present value of one appraiser being well in excess of two times the other appraiser, even when both agree on the subject company's cash flow forecast and "typical" risk.

Appraisers can avoid these five pitfalls by applying the completed transaction method. With this method—and if the sample size of completed transactions is sufficiently large and comparable in terms of business, size, and margins—the appraiser can "simply" apply the observed multiple(s) to the subject company. This method completely eliminates the inherent adjustments for unsystematic risk, liquidity, small stock premium, PTE taxes, and cash/leverage by utilizing the real transaction market-clearing price dynamic in the competitive give and take between buyers and sellers of small private businesses.

Exhibit 1. Practical Example of the "Pitfalls"



12 Dr. Aswath Damodaran, "Dealing With Cash, Cross Holdings and Other Non-Operating Assets: Approaches and Implications," Stern School of Business, September 2005.

Because of the completed transaction method's attractive built-in market clearing price dynamic, we developed the implied private company pricing line (IPCPL). And through IPCPL, we set aside the above-described pitfalls by converting transaction data to a cost of capital. Here's how we did it.

Overview of IPCPL 2.0

IPCPL is the private company cost of capital line (curve) created by connecting two estimated data points:

- Data Point 1 is based on transaction prices of 500 small private businesses from the Pratt's Stats transaction database, published by Business Valuation Resources (the "IPCPL 500"); and
- Data Point 2 is based on the cost of capital, adjusted for the cost of going and staying public, of micro-cap publicly traded companies in the range of $150 million revenues.[13]

As expected, our cost of capital calculations indicate a higher return for the smaller-sized companies of Data Point 1 and a lower return for the larger-sized companies of Data Point 2. Further, the two points are connected by a curve (skip to Exhibit 7 if you must!) that is shaped by a "no-arbitrage" rule to mitigate any possibility to arbitrage or profitably "roll up" the smaller companies into larger ones.

IPCPL Data Point 1

The IPCPL cost of capital derivation, while novel, is based on the well-known valuation axiom $K_0 = (FCFF_1/P) + g$.[14] Since K_0 is axiomatic, Point 1 is the natural result if the inputs $FCFF_1$, P, and g, are sound. The IPCPL 500 data that populates Point 1 was obtained from the market-clearing prices of 500 privately held businesses, as described below. Exhibit 2 summarizes Point 1.

The IPCPL 500's 18.1% internal rate of return (IRR) represents the cost of capital (pretax FCFF discount rate) most consistent with actual clearing prices for the asset class— small privately held businesses. Stated differently, the $1.867 billion aggregate fair market value (or "P" in the K_0 equation) inherently reflects the market's net adjustment for unsystematic risk, liquidity, PTE taxes, etc. And because the formula is axiomatic, we eliminate the pitfalls of extrapolating public equities rate of return data to private companies.

IPCPL 500 population. The IPCPL 500 consists of Pratt's Stats private company acquirer transactions from 1998 to 2013 with either: (1) total revenue between $4.4 million and $10.0 million; or (2) total assets (excluding cash) between $1.3 million and $4.5 million.[15]

Exhibit 2. Aggregation of the IPCPL 500
($ in Millions – 500 Private Company Transactions)

		% of Revenue
Revenue TTM	$3,135.2	
Operating Income TTM	300.8	9.6%
Fair Market Value T_0	1,866.5	59.9%
Operating Book Capital TTM	590.7	18.9%
Aggregate Revenue Growth	2.36%	
Holding the above relationships constant: $FCFF_1$ = $300.8 * 1.0236 – ($590.7 * 2.36%) = $294.0 K_0 = $FCFF_1$ / P + g = $294.0 / $1,866.5 + 2.36% = 18.1% = IRR		

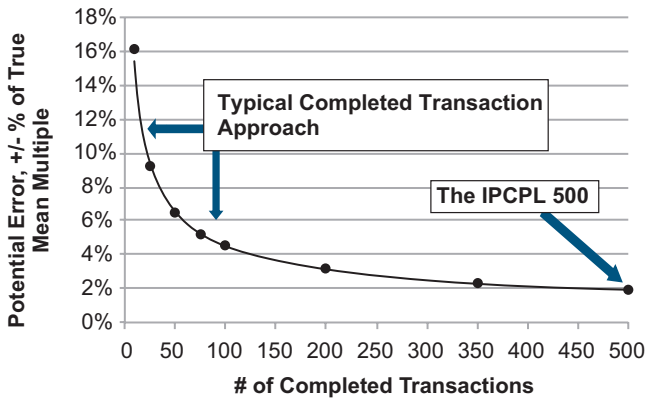
13 For the cost of going and staying public, see Stuart, Alix, "Little Change in Audit Fees," June 16, 2011, CFO.com (http://www.cfo.com/article.cfm/14582443/c_14582548).

14 This ex-ante approach is essentially the same approach used by Damodaran when he publishes his monthly equity risk premium estimates. And note that IPCPL, like Damodaran's monthly ERP model, requires appraiser judgment. That is, the K_0 model is axiomatic, but the inputs must be estimated.

15 Both size criteria span the 95th and 99th percentiles of Pratt's Stats transactions in the past two years, and both resulted in approximately the same number of transactions. We adjusted these figures slightly to create a rounded number of 500 companies. Further, we only included transactions of U.S. companies that were acquired by a private company and which reported owner's compensation. And we did not double count deals that fell into both the sales- and asset-size criteria.

IPCPL 500 transaction data reliability. The most common concern we encounter with the transaction data we employ is that it is inherently flawed by imperfections, such as incorrectly reported information. Indeed, based on obvious transaction duplicates between Pratt's Stats and BIZCOMPS, we see that some data were occasionally contradictory by significant amounts—making the data potentially unreliable on a data point-by-data point basis. However, because this noise is random, the aggregated data are, in fact, highly reliable with a large sample size of 500 data points. In the same way, a large portfolio of stocks nearly eliminates unsystematic risk; a portfolio of 500 transactions does the same to data errors. Exhibit 3 shows how the noise/errors are eliminated by the "law of large numbers."

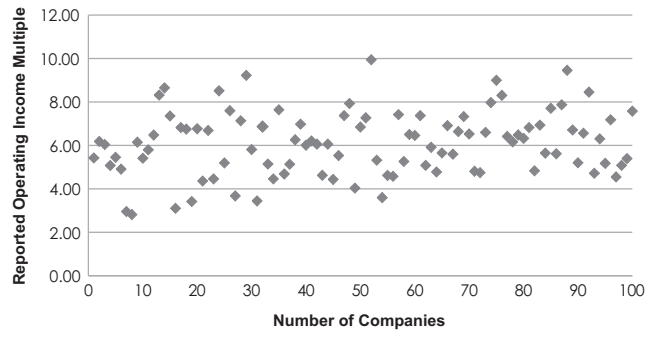
Exhibit 3.



To demonstrate the ability of our large sample size to cure any bad data problem, we performed the statistical analysis described below.

Assume that: (a) there were no "crazy" prices paid by buyers or sold by sellers; and (b) the reported transaction data relevant to determining a price-to-operating income multiple was a perfectly accurate 6.00. Next, assume a significantly large actual data problem using a sample of 100 transaction data points, with a true mean of 6.00 and a standard deviation of 1.35, as shown in Exhibit 4.[16]

Exhibit 4. Simulation of Data Errors.



As we see from the statistical analysis in Exhibit 3 (which uses the data problems illustrated in Exhibit 4), our aggregated data set for the IPCPL 500 transactions is nearly perfectly reliable.[17] Specifically, with a sample size of 500, we are 95% confident that the reported data mean operating income multiple is between 5.88 and 6.12 if the true mean is 6.00.

IPCPL 500 aggregate growth assumption. Recall we employ the valuation axiom $K_0 = (FCFF_1/P) + g$ to solve for the IPCPL 500 K_0/IRR. One input we must estimate is the aggregate growth rate (g) for our 500 companies to solve for the aggregate K_0/IRR. But importantly, we note that the growth rate assumption, within reason, is not critical. Since higher growth dampens $FCFF_1$ due to increased investments in fixed assets and working capital, we calculate that K_0/IRR changes only by about one-half of the assumed change in growth.

To estimate aggregate growth, we used real revenue growth and business age data from Pratt's Stats as well as small business failure rate data from the Bureau of Labor Statistics (BLS). This was our process:

16 Exhibit 4 is an Excel model simulating individual, unreliable data points with a specified mean of 6.00 and a standard deviation (standard error here) of 1.35. For illustration purposes only, this error would imply that the data are inherently unreliable for its typical use, yet still highly reliable for a sample size of 500 transactions.

17 Although we are not aware of any research that claims that these data providers' transaction data are systematically biased (net net), we believe that we must qualify our confidence interval claims accordingly.

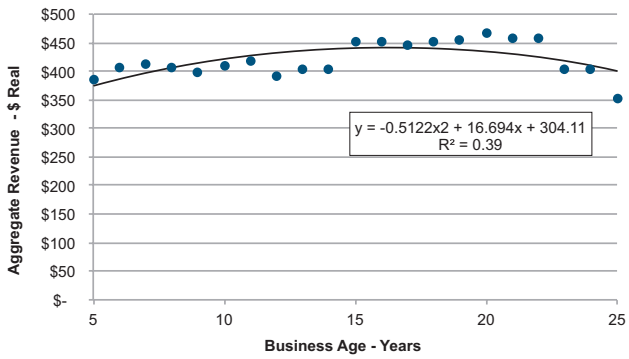
- First, we sorted 10,000 companies in Pratt's Stats by business age—from one to 30 years—using a 10-year moving average. This yielded an unbiased estimate of revenue for companies aged five to 25.

- Second, we examined this sorted data by looking at the change in revenue as a function of age. While the average real growth rate was 4.8%, this sorted data only considers surviving companies—a statistical bias.

- Third, we took the Pratt's Stats business-age-sorted data and adjusted the surviving number of companies to reflect that the total number of companies is growing over time. Specifically, we "grossed-up" the number of older companies by the BLS's "net birth rate" of 0.44%.[18] For example, if there were 500 companies that were 10 years old, we adjusted the figure higher, to 500*(1 + .0044)^10. Based on this analysis, the implied average failure rate of our 10,000 companies was approximately 5%. We compared this figure to data from the BLS that similarly indicated a long-run small business failure rate of approximately 5%.

- Fourth, from the sorted and adjusted data of 10,000 companies, we calculated aggregate revenue by company age. The result is set forth in Exhibit 5.[19]

Exhibit 5. Aggregate Revenue Growth ($Millions)



Based upon the foregoing, we estimate the *real* aggregate growth rate of the IPCPL 500 to be 0%. Consequently, we expect aggregate *nominal* growth equal to long-term inflation. Therefore, as part of our "present day" adjustment (see next section), we update aggregate growth to include changes in inflation expectations. In Exhibit 2, our proxy for long-term inflation is the 20-year Treasury bond less 0.35% (a typical TIPS rate), or 2.36% at the time this article was prepared.[20]

IPCPL 500 'present day' adjustment. The IPCPL 500 is composed of transactions that occurred over the last 15 years. All else being equal, a current increase in the S&P 500 equity risk premium would decrease the value (P) of the IPCPL 500 and increase risk (K_0/IRR). Therefore, we modestly reprice our 15-year sample of Pratt's Stats transactions to account for the risks of today's market versus the average market conditions that existed over the 15-year sampling period. To do so, we applied this formula: $(ERP_0 – ERP_{15yravg})/2$. We divided by two, creating a simple average, because: (1) real interest rates correlate negatively with equity risk premiums; (2) the cost of capital is slightly less responsive to changing equity risk premiums than the cost of equity; and (3) to make a more modest adjustment, generally.

The current present day adjustment is only a 0.6% increase to our IPCPL 500 K_0/IRR estimate, which would be added to the "raw" 18.1% K_0/IRR calculated in Exhibit 2. Making no adjustment would be analogous to using a historical average ERP. Making the adjustment is analogous to

18 Net birth data from the BLS indicate new business formations exceed old business deaths by 0.44% annually over the relevant time frame.

19 Had real growth been as low as 1%, for example, the aggregate revenue in Year 25 would have exceeded $500 million.

20 We would normally estimate inflation by subtracting the 20-year Treasury Inflation Protected Securities (TIPS) rate from the 20-year Treasury bond. However, the TIPS rate is presently not a reliable indicator because of the current low interest rate environment and the fact that a TIPS inflation contract is bound at zero. Practitioners could also obtain an estimate of the long-term inflation rate from The Livingston Survey.

using Damodaran's current implied ERP using the estimated IRR on the S&P 500.[21]

IPCPL 500 owner/operator compensation adjustment. For the IPCPL 500, we sum all reported owner operator compensation and add this figure back to operating income. We then subtract market compensation determined from analyzing a leading market compensation database geographically adjusted for the IPCPL 500. That said, our relatively large minimum revenue/asset size criteria were selected to make the confidence interval of the compensation adjustment not material relative to the much larger aggregate operating income of the IPCPL 500.

IPCPL 500 cash add back/leverage. Our IPCPL 500 return data are an unlevered, cost of invested capital. Consistent with Damodaran's above analysis on cash holdings, we adjust the purchase price of the IPCPL 500 to include only operating/wasting/non-interest-bearing cash holdings. We estimate this non-interest-bearing amount to be 1% of revenue.[22] Therefore, users of the IPCPL need to add to the unlevered PV enterprise value all cash holdings that are capable of earning interest and, if valuing equity, subtract all interest-bearing debt.

IPCPL Data Point 2: IWC Micro-Cap

Point 2 on the IPCPL curve is for otherwise comparable companies with $150 million revenue. Given that private companies of this size can go public, we employ standard K_0 estimation using the Fama-French three-factor model on the most broadly traded micro-cap exchange traded fund, iShares Micro-Cap ETF (Ticker IWC).[23] We then adjust the result to convert to a private company equivalent of 11.6%, as shown in Exhibit 6.

Exhibit 6. Aggregate Revenue Growth ($Millions)

Size Adjustment:

Micro Cap ETF - Ticker IWC(1): (Fama French Model)

Market F	SMB	HML	Implied ERP
1.05	1.10	0.17	5.46%

	Cost	Weight	Subtotal
Cost Of Equity	10.94%	100.00%	10.94%
Cost of Debt - AFIT (2)	3.25%	0.00%	0.00%
Cost of Capital		100.00%	10.94%

Cost of Capital - Public Company	10.94%
Private Company Indifference Discount	0.70%
Private Company Cost of Capital Equivalence	11.64%

Private Company Indifference Discount ($000s)

Revenue	$150,000		
Operating Margin	8.11%		
Operating Income	$12,168		
Annual Staying Public Company Costs (3)	500		
Annual Staying Public Company Costs %	4.1%		
Going Public Cost	2.3%		
Private Company Indifference Discount	6.41%	0.70%	of 10.94%

Notes:

(1) IWC actual median size of revenue $230Mil Approx.
We adjusted SMB for $150Mil according to smb relationship of SPY IWM and IWC

(2) Sample of IWC companies had slight negative net debt position

(3) Source: http://www.cfo.com/article.cfm/14582443/c_14582548

The IPCPL interpolation curve—connecting the dots

As previously noted, we assumed a "no-arbitrage" approach/"law of one price" to develop the curve between Data Point 1 and Data Point 2.[24] Otherwise, investors could roll up companies, take them public, and earn outsized gains.[25] The resulting nonlinear curve is set forth in Exhibit 7, showing that the proxy for liquidity and unsystematic risk is nonlinear.

21 See pages.stern.nyu.edu/~adamodar/.

22 This percentage is based on our experience. We believe differentiating on the basis of interest-bearing versus non-interest-bearing cash is more objective than other methods of estimating "excess cash" and failing to relever beta for that excess.

23 The iShares Micro-Cap ETF seeks investment results that correspond generally to the price and yield performance of the Russell Microcap® Index. See us.ishares.com/content/stream.jsp?url=/content/en_us/repository/resource/fact_sheet/iwc.pdf for more information.

24 The economic law of one price, stated in any microeconomics textbook, is stated as: "In an efficient market, all identical goods must have only one price." The intuition for this law is that all sellers will flock to the highest prevailing price, and all buyers to the lowest current market price. In an efficient market, the convergence on one price is instant.

25 In applying this approach, we used the Double Lehman formula; see en.wikipedia.org/wiki/Lehman_Formula.

Conclusion

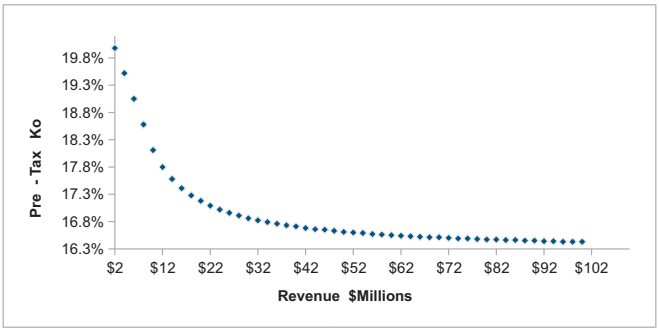
We demonstrated the volatile effect of the pitfalls when extrapolating public equity securities returns to small privately held businesses. The IPCPL completely eliminates the pitfalls for unsystematic risk, liquidity, small stock premium, PTE taxes, and cash/leverage by utilizing real transaction market-clearing prices between buyers and sellers of comparable small private businesses. Thus, the IPCPL is empirically tethered to economic reality. Without additional adjustment, the two appraisers in the example above would using the IPCPL arrive at the same conclusion—not something on the order of the potential magnitude we show.[26]

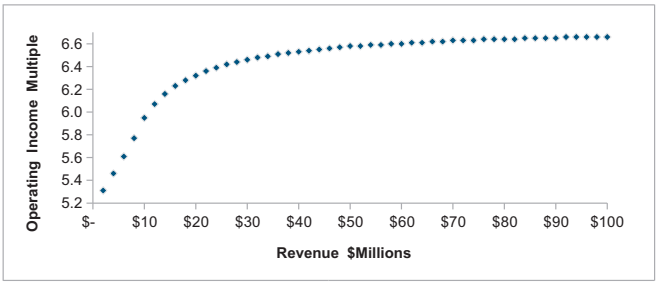
IPCPL is not perfect—after all, it's a model. But that is not the issue. The real question is whether IPCPL is significantly more reliable than extrapolating traditional stock market returns to private company cost of capital. We believe it is. For what it is worth, we are already finding this model very useful in our own practices—either as a stand-alone tool, where appropriate, or in conjunction with other methods.

Share your thoughts

If the business valuation profession is to advance, it needs to be open to new methods and approaches. Of course, traditional methods will always have their place, but new tools can—and should—be encouraged and considered as additions to the valuation toolbox. That means opening a dialogue and discussing new concepts, theories, and approaches.

Exhibit 7. IPCPL





What do you think about the IPCPL model's new perspective on the problems of comparing public and private data? *Business Valuation Update* wants your feedback, so email the editor at andyd@bvresources.com.

Bob Dohmeyer, ASA, *is a shareholder at Dohmeyer Valuation Corp., located just outside of Dallas.*

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26 As referenced in our webinar to the Experienced Business Appraiser Group on LinkedIn on Feb. 19, 2013, if appraisers determine that their subject company is more or less risky (systematic and/or total risk) *relative to small private companies of similar size*, we recommend a risk analysis, which is also available at www.Biz-App-Solutions.com. In this risk adjustment, where we move off the IPCPL (typically, only slightly), we account for differences in systematic as well as total risk of the subject company using a normalized risk assessment of various publicly traded guideline companies as a benchmark. We plan to write a follow-up article to address this generally nominal adjustment to the cost of capital.